

REMARKS

These remarks are in response to the Office Action dated December 18, 2002. Claims 9-14, 17 and 22 are allowable. Claims 1, 4 and 18-21 have been amended. Support for the amendments can be found throughout the specification. For example, support for "hypomorphic expression of the polypeptide increases resistance to heat stress in *Drosophila*," as recited in claims 1, 4 and 21, can be found at page 78, lines 21-24. No new matter has been added.

Attached is a marked-up version of the changes being made by the current amendment. Claims 1-4 and 6-22 are pending and at issue. Applicants respectfully request reconsideration of the present application.

**I. REJECTIONS UNDER 35 U.S.C. §112, SECOND PARAGRAPH**

Claims 1-4, 6-8, 15, 16 and 21 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite for the recitation of "modulates." While Applicants traverse this rejection, Applicants note that the recitation of "modulates" has been deleted from the claims and replaced with "hypomorphic expression of the polypeptide increases resistance to heat stress in *Drosophila*." Applicants believe that these amendments render the rejection moot with regard to independent claims 1, 4 and 21 and the claims which depend therefrom. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §112, second paragraph, be withdrawn.

**I. REJECTIONS UNDER 35 U.S.C. §101**

Claims 18-20 stand rejected under 35 U.S.C. §101 as allegedly directed to non-statutory subject matter. While Applicants traverse this rejection, Applicants note that the claims have been amended to recite an "isolated" antibody. Applicants believe that this amendment renders the rejection moot with regard to claims 18-20. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §101 be withdrawn.

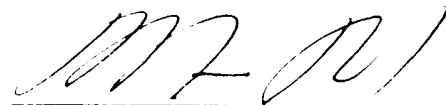
In summary, for the reasons set forth herein, Applicants maintain that claims 1-4 and 6-22 clearly and patentably define the invention. Applicants request that the Examiner reconsider the various grounds set forth in the Office Action and allow the claims which are now pending.

If the Examiner would like to discuss any of the issues raised in the Office Action, Applicants' representative can be reached at (858) 678-5070. Please charge any additional fees, or make any credits, to Deposit Account No. 06-1050.

Respectfully submitted,

Date: \_\_\_\_\_

3/18/03



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Version with markings to show changes made

In the claims:

Claims 9-14, 17 and 22 are allowable.

Claims 2, 3, 6-8, 15 and 16 are reiterated.

Claims 1, 4 and 18-21 have been amended as follows:

1. (**Thrice Amended**) An antibody that selectively binds to a polypeptide selected from the group consisting of:

a) a polypeptide encoded by a nucleic acid molecule which hybridizes in 0.1 x SSC at 68°C to a nucleic acid molecule comprising SEQ ID NO:1, wherein 1) the polypeptide is a GPCR, 2) failure to express the polypeptide results in embryonic lethality in *Drosophila*, and 3) hypomorphic expression of the polypeptide [modulates] increases resistance to [the effect of] heat stress in *Drosophila*;

b) a polypeptide comprising an amino acid sequence which is at least 85% homologous to the amino acid sequence of SEQ ID NO:2, wherein 1) the polypeptide is a GPCR, 2) failure to express the polypeptide results in embryonic lethality in *Drosophila*, and 3) the polypeptide modulates the effect of heat stress in *Drosophila*; and

c) a polypeptide comprising amino acid residues 1 to 200 of SEQ ID NO:2.

2. (**Reiterated**) The antibody of claim 1, wherein the antibody is polyclonal.

Reiterated

4. (**Thrice Amended**) A kit useful for the detection of a polypeptide, the kit comprising a carrier containing one or more containers comprising a first container containing an antibody that selectively binds to a polypeptide selected from the group consisting of:

a) a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes in 0.1 x SSC at 68°C to a nucleic acid molecule comprising SEQ ID NO:1, wherein 1) the polypeptide is a GPCR, 2) failure to express the polypeptide results in embryonic lethality in *Drosophila*, and 3) hypomorphic expression of the polypeptide [modulates] increases resistance to [the effect of] heat stress in *Drosophila*;

b) a polypeptide comprising an amino acid sequence which is at least 85% homologous to the amino acid sequence of SEQ ID NO:2, wherein 1) the polypeptide is a GPCR, 2) failure to express the polypeptide results in embryonic lethality in *Drosophila*, and 3) the polypeptide modulates the effect of heat stress in *Drosophila*; and

c) a polypeptide comprising amino acid residues 1 to 200 of SEQ ID NO:2.

6. (**Reiterated**) The kit of claim 4, wherein the antibody is a human antibody.

7. (**Reiterated**) The kit of claim 6, wherein the antibody is monoclonal.

9. **(Allowed)** An isolated antibody or fragment thereof that selectively binds to:

- a) a polypeptide comprising SEQ ID NO:2;
- b) a polypeptide comprising amino acid residues 1 to 200 of SEQ ID NO:2;
- c) a polypeptide consisting of an antigenic fragment of SEQ ID NO:2; or
- d) a polypeptide consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises at least 50 contiguous amino acid residues of SEQ ID NO:2.

10. **(Allowed)** The antibody of claim 9, which is a monoclonal antibody.

11. **(Allowed)** The antibody of claim 9, which is a polyclonal antibody.

12. **(Allowed)** The antibody of claim 9, which is a humanized antibody.

13. **(Allowed)** The antibody or fragment thereof of claim 9, which is a human antibody.

14. **(Allowed)** The antibody or fragment thereof of claim 9, which is a single chain antibody.

15. **(Reiterated)** A composition comprising the antibody of

16. **(Reiterated)** A hybridoma cell line that produces a monoclonal antibody according to claim 1 or claim 9.

17. **(Allowed)** An isolated antibody or fragment thereof produced by immunizing an animal with:

- a) a polypeptide comprising SEQ ID NO:2;
- b) a polypeptide comprising amino acid residues 1 to 200 of SEQ ID NO:2;
- c) a polypeptide consisting of an antigenic fragment of SEQ ID NO:2; or
- d) a polypeptide consisting of a fragment of SEQ ID NO:2, wherein said fragment comprises at least 50 contiguous amino acid residues of SEQ ID NO:2,

wherein the antibody specifically binds to the polypeptide comprising SEQ ID NO:2.

18. **(Amended)** An isolated antibody produced by immunizing an animal with a polypeptide having an amino acid sequence as set forth in SEQ ID NO:2, which antibody specifically binds to the polypeptide.

19. **(Twice Amended)** An isolated antibody that selectively binds the hydrophilic domain of an mth polypeptide between hydrophobic domains five and six of SEQ ID NO:2.

20. **(Amended)** An isolated antibody that selectively binds to a polypeptide comprising amino acids 407-420 of SEQ ID NO:2.

21. (**Twice Amended**) A kit comprising an antibody which selectively binds to a polypeptide selected from the group consisting of:

a) a fragment of the amino acid sequence of SEQ ID NO:2, wherein 1) the fragment is a GPCR, 2) failure to express the fragment results in embryonic lethality in *Drosophila*, and 3) the fragment modulates the effect of heat stress in *Drosophila*;

b) a polypeptide comprising the amino acid sequence of SEQ ID NO:2, wherein the polypeptide is encoded by a nucleic acid molecule which hybridizes in 0.1 x SSC at 68°C to a nucleic acid molecule comprising SEQ ID NO:1, wherein 1) the polypeptide is a GPCR, 2) failure to express the polypeptide results in embryonic lethality in *Drosophila*, and 3) hypomorphic expression of the polypeptide [modulates] increases resistance to [the effect of] heat stress in *Drosophila*; and

c) a polypeptide comprising an amino acid sequence which is at least 85% homologous to the amino acid sequence of SEQ ID NO:2, wherein 1) the polypeptide is a GPCR, 2) failure to express the polypeptide results in embryonic lethality in *Drosophila*, and 3) the polypeptide modulates the effect of heat stress in *Drosophila*,

and instructions for use.

22. (**Allowed**) A kit comprising an antibody which selectively binds to:

a) a polypeptide comprising SEQ ID NO:2;

b) a polypeptide comprising amino acid residues 1 to 200 of SEQ ID NO:2;

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d) a polypeptide consisting of a fragment of SEQ ID NO:2,  
wherein said fragment comprises at least 50 contiguous amino  
acid residues of SEQ ID NO:2.